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**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS, HOUSTON DIVISION**

EXPERT REPORT OF BENJAMIN SCHLESINGER, PH.D.

November 21, 2007

1 **Background**
2

3 1. My name is Benjamin Schlesinger. I am president of Benjamin Schlesinger and
4 Associates, Inc. (“BSA”), an economic and strategic consulting firm focused on
5 the natural gas industry. BSA is located at 7201 Wisconsin Avenue, Bethesda,
6 Maryland. I hold A.B. and B. Engineering degrees from Dartmouth College and
7 M.S. and Ph.D. degrees in Industrial Engineering (now, Management Science and
8 Engineering) from Stanford University.

9 2. I have 35 years of experience in managing and carrying out economic, strategic
10 and engineering analyses of energy issues, with emphasis on North American
11 natural gas commodity movements and pricing, values, policies and programs. I
12 have advised more than 400 clients in the U.S., Canada, and 25 other countries,
13 including the top utility, energy trading and producing, manufacturing, regulatory,
14 educational, private power, and financial services companies. My firm’s work
15 involves market research in the gas trade, due diligence (in which we act as the
16 independent gas market advisor in project finance), and litigation support. A
17 former vice-president of the American Gas Association, I have testified before the
18 U.S. Congress and in 16 states and provinces on the direction of the gas industry,
19 gas contracting, purchase and sales prices, royalty valuations, market value,
20 hedging and risk management, and related industry issues and practices.

21 3. Since the 1970s, I have studied gas markets extensively, and my firm and I helped
22 the gas industry evolve many of the commercial mechanisms that are commonly
23 used today, including gas spot trading, gas price indexation, gas price reporting,
24 and spot-indexed long-term contracts. From 1984 through 2000, I served as a
25 founding member of the NYMEX Natural Gas Advisory Committee. In that role,
26 I helped create the initial design and specifications of the gas futures contract, I
27 conducted market analysis for NYMEX that led to its selection of Henry Hub as
28 the point of physical gas delivery under the futures contract, and I advised
29 NYMEX in reforming and updating the contract and other gas related offerings,
30 including options and basis swaps. Through more than a dozen updates, BSA’s
31 Directory of Energy Marketing Companies has been the gas industry’s standard

1 database concerning its changing mix of marketing companies and commercial
2 mechanisms in the post-regulation era.

3 4. My curriculum vitae and list of previous appearances as an expert witness are
4 attached as Exhibit 1.

5

6 **Purpose of this Report**

7

8 5. I was engaged by counsel to the captioned defendants to review Expert Reports
9 filed in these proceedings by Matthew P. O'Loughlin, of the Brattle Group with
10 respect to the following five issue areas.¹

11

12 a. Are the indices published by Platts Inside FERC's Gas Market Report
13 ("GMR") and Natural Gas Intelligence ("NGI") (herein, the publishers)
14 actually volume-weighted averages ("VWA") of the reports the publishers
15 receive from the field or do they make use of other methodologies?

16 b. Mr. O'Loughlin's analysis involves a calculation of what the index price
17 of gas would be at various times and locations without El Paso's reports
18 included. This assumes the remaining data reflect actual market
19 conditions, and that trades would be made at the adjusted index price once
20 "false" trades are eliminated. Are all trades made at the same price?

21 c. How does Mr. O'Loughlin's theory he terms "Sum of Absolute Loss"
22 work, and is it valid?

23 d. Do published index prices influence gas futures contract prices as traded
24 on the New York Mercantile Exchange (NYMEX)?

25 e. In general, how does the U.S. gas market function in terms of its
26 commodity trading activities?

27

28 6. I address each of the foregoing questions in the following findings:

29

¹ Because Mr. O'Loughlin's work in these matters relies on his reports in US v. Singleton/Valencia, I have reviewed his reports in those cases as well.

1 **1) Published price indices are not automatically volume weighted average**
2 **calculations of information received by the publishers; instead, they result from the**
3 **exercise of extensive editorial judgment.**

4

5 7. Both data from, and statements made by the publishers show that volume
6 weighted averages (VWAs) alone cannot explain their published indices. Prices
7 published by both GMR and NGI routinely involve editorial judgment and are not
8 automatic volume weighted average (“VWA”) calculations. This is demonstrated
9 by the testimony by NGI publisher Mark E. Curran addressing the NGI published
10 price index for Malin in August 2000. Mr. Curran testified that data provided by
11 survey respondents to NGI during bid-week July 2000 for August 2000² is input
12 into what he describes as a “collection” spreadsheet. From this “collection”
13 spreadsheet he calculated an initial VWA price of \$3.869. However, he continued
14 to testify that the “collection” spreadsheet is not the final “calculation”
15 spreadsheet. The published price for Malin for that month was \$3.91. Mr. Curran
16 testified that the raw survey data was subjected to a series of spreadsheet
17 manipulations and evaluations in order to arrive at the final “calculation”
18 spreadsheet and the published index price of \$3.91. Likewise, GMR also makes
19 use of editorial judgment and expertise in arriving at its published index prices
20 each month. In testimony given by GMR publisher Kelly Doolan, Mr Doolan
21 makes it clear that the index price published in GMR is not an automatic VWA.
22 He states that the published price is the publisher’s “opinion assessment” of the
23 market.³

24 8. By way of background to this question, I have studied gas market indexation since
25 it began in 1984. In 1984, in a report for Oil Daily, my firm and I designed the
26 monthly gas price indexation process that was used by Natural Gas Week during
27 the 1980s and 1990s. We advised the publishers on whom to call, how to
28 assemble the data, and when and what to publish. In conjunction with recent
29 litigation, I have also studied the way Platts arrives at its gas market price indices.

² Bid-week refers to the last five business days of any month during which monthly natural gas contracts for the following month are traded, and from which trades IFERC monthly indices are derived.

³ Excerpts of testimony by Messrs. Curran and Doolan are in Exhibit 2 to this report.

1 In addition, in preparing BSA's Directory of Energy Marketing Companies
2 annually from 1986-1999, my firm and I engaged in extensive surveys of the gas
3 industry and its commercial participants. We gathered data concerning
4 marketers' gas sales volumes, employment, types of customers, physical versus
5 financial gas purchasing practices, and the like. We are quite familiar with data
6 gathering in this industry, and with the kinds of expertise and judgment that are
7 necessary in arriving at meaningful numbers, prices included.

8 9. The final point of background to this question is that my firm is a charter
9 subscriber of GMR (we received every issue in its history) and we have
10 subscribed to NGI since 1985. We have and continue to make extensive use of
11 gas market price indices from these publications in our consulting assignments for
12 commercial market participants, utilities, government and academic clients.
13 Through the foregoing experiences, I understand that publishers do not, in fact,
14 automatically calculate and publish VWAs as gas market price indices. In my
15 opinion, therefore, Mr. O'Loughlin is incorrect when he states:

16
17 “In my opinion, the evidence establishes that the Index Publishers’
18 spreadsheets and, in particular, their volume weighted average calculations,
19 form the centerpiece of their index price determinations.” (O'Loughlin,
20 March 21, 2007 report, page 11, paragraph 25)

21
22 10. In fact, the centerpiece of gas market price indices published by IFGMR and NGI
23 is the publisher's exercise of a considerable degree of experienced, skilled
24 editorial judgment. Therefore, Mr. O'Loughlin's conclusion that a change in the
25 VWA would necessarily mean a change in the published index is incorrect.

26
27 **Finding 2) Trading of gas takes place within a fairly wide range that encompasses**
28 **numerous transactions, each taking place at different prices; thus trades do not all**
29 **take place at exactly the same price.**

30

11. Mr. O'Loughlin calculates price changes at various trading locations that he claims were the result of allegedly false price reports submitted by defendants in these proceedings.⁴ For example, Mr. O'Loughlin finds that the NGW SoCal Index was \$.09 per MMBtu off in August 2000 and \$.33 per MMBtu off in September 2000. The comparable figures for GMR were \$.07 per MMBtu and \$.18 per MMBtu, respectively.

12. I have examined spreadsheets behind GMR's reported index prices at four locations during August 2000 through April 2001 in order to gain an understanding of gas price transactions and their price ranges (see Exhibit 3). I note, for example, that reported (and published) gas prices at SoCal during August 2000 and September 2000 had a range of \$.50 per MMBtu and \$1.76 per MMBtu respectively, which substantially exceeds the price changes computed by Mr. O'Loughlin. Moreover, standard deviations at all points were quite high, as shown in the chart in Exhibit 3. This is because prices of gas in transactions rarely take place at exactly the same number.

13. I conclude that gas markets are characteristically quite diverse and subject to price changes for many natural reasons. For example, the wide range in reported SoCal prices for September 2000 took place because a significant pipeline event evidently took place during bid week, the reopening of one of El Paso Natural Gas's pipelines to California. An event like that would be expected to reduce prices at SoCal because it allows more gas supplies to enter that location. Thus, SoCal prices fell during bid week (late August 2000), thus accounting for the wide range and high standard deviation underlying the September 2000 SoCal price index. El Paso's reported prices were well within the reported range.

Finding 3) Mr. O'Loughlin's theory that uses the term "Sum of Absolute Loss" is not valid. All damages calculated pursuant to this theory should be ignored.

⁴ See, for example, Figure 2, pages 1 and 2, to Supplement to Expert Reports of Matthew O'Loughlin, June 2, 2006, in USA vs. Greg Singleton (Criminal Action No. H-06-80).

1 14. Mr. O'Loughlin's "Sum of Absolute Loss" theory holds that somebody's gains
2 that resulted from allegedly false price reporting must necessarily have resulted in
3 corresponding losses to somebody else, i.e., sellers lose whenever buyers gain,
4 and they do so on a one-to-one basis.⁵ For example, his theory tells us that
5 suppliers of gas to buyers like Southern California Gas Company (the local gas
6 utility for Los Angeles and surrounding counties, herein "SoCal Gas") lost money
7 at times when Southern California Gas Company purchased gas a price lower than
8 would otherwise been the case but for Defendants' alleged false reporting. Mr.
9 O'Loughlin states it this way:

10
11 "As I explain herein, the counterparties to the five market participants bore
12 the losses associated with these transactions [in which the buyers gained].
13 For example, the counterparties to San Diego Gas and Electric, Southern
14 California Gas, and Pacific Gas and Electric lost (\$611,850), (\$895,346),
15 and (\$126,900), respectively." (O'Loughlin June 2, 2007 Supplement to
16 Singleton/Valencia Expert Report, page 3, 5th full paragraph)

17
18 15. Mr. O'Loughlin's statement – and his theory – are wrong because they ignore the
19 hedging practices of gas traders and marketers. In my experience, significant
20 components of the gas industry, especially gas trading and marketing companies,
21 hedge the bulk of their transaction, i.e., they insulate and isolate themselves from
22 price variability inherent in indexing purchases and sales to monthly published
23 index prices. This practice is necessary in order to prevent potentially
24 considerable losses due to market speculation. Through their hedging practices,
25 they reduce their outstanding (open) speculative positions down to an acceptable
26 level, known as the value at risk, which level is proscribed by management.
27 Again, the purpose of this form of management control is to force traders to buy
28 and sell gas in a way that insulates them from price volatility. For example, a
29 sellers of gas suppliers to SoCal Gas at the SoCal index typically hedge these

⁵ Mr. O'Loughlin applies this theory in Table 5 of his Expert Report in US v. Phillips/Walton/
Brooks.

1 transaction in a way that limits index price risk to them - i.e., they proactively de-
2 index their transactions to a substantial degree.

3 16. Information about marketers' financial transactions that I examined, which was
4 obtained in response to Grand Jury subpoenas in these proceedings, bears out this
5 practice. For example, I found that Duke Energy's value at risk averaged about 2
6 percent of its book of transactions throughout 2000, varying tightly from a low of
7 1.91 percent to a high of 2.04 percent. The following table shows for Duke
8 Energy the percentage of unhedged dollars divided by total positive dollars:⁶

9

<u>Month</u>	<u>Percent of unhedged to total dealings</u>
Jan-00	2.040
Feb-00	2.000
Mar-00	1.980
Apr-00	1.970
May-00	2.090
Jun-00	2.110
Jul-00	1.980
Aug-00	1.980
Sep-00	1.950
Oct-00	1.950
Nov-00	1.980
Dec-00	1.910
Average 2000	1.995

10

11 17. In other words, it is apparent to me that Duke's management was following
12 recognized procedures within the trading industry and keeping its unhedged
13 exposures to a minimum. Upon spot check, I found other trading companies to be
14 similarly well-hedged, although to varying degrees.

15 18. I conclude from the foregoing and from my industry experiences and expertise
16 that SoCal's suppliers were largely "de-indexed" in that they had eliminated index
17 risk from their transactions – their finances were therefore unaffected if the
18 monthly SoCal gas price index were different for one reason or another in a given

⁶ I obtained the percentages in the table as follows: for each month, I added the dollar value of all open long (positive) exposures, then added the dollar value of all open short (negative) exposures, then divided one by the other and subtracted 1 to obtain the data shown in the table.

1 month. If a gas buyer like SoCal gained because of a monthly price index that
2 was reduced as a result of allegedly false reporting, SoCal Gas's suppliers did not
3 necessarily suffer any consequences.

4 19. Seemingly unaware of this industry practice, Mr. O'Loughlin states:

5
6 "I do not believe that marketers always tend to fully offset or zero out their
7 trading positions, however. Marketers sometimes carry net long or short
8 positions relative to an index for a variety of reasons. (O'Loughlin, March
9 21, 2006 Expert Report in US v. Valencia, page 32, paragraph 63)

10
11 20. Actually, the actual dollar amounts of marketers' net open speculative positions
12 are typically quite small in comparison with the overall dollar amounts of their
13 transactions, and the percentage is typically well-controlled by management
14 against proscribed guidelines. Marketing companies are largely insulated against
15 the losses created by gains to counterparties such as Southern California Gas
16 Company. Thus, Mr. O'Loughlin's "sum of absolute loss" theory is wrong and
17 would vastly overstate damages in these proceedings, if any. Despite this reality
18 of the way the industry works, Mr. O'Loughlin's theory would have us seek to
19 ascribe losses to someone, somewhere, even though he does not provide us with a
20 clue as to where to look.

21 21. In my opinion, Mr. O'Loughlin's "Sum of Absolute Loss" calculations do not
22 accurately estimate losses because much of the gas trade is de-indexed by virtue
23 of its extensive hedging practices. In other words, gas marketers routinely
24 arrange their financial transactions so as to shield themselves from price volatility
25 in the market as reflected by ever-changing gas market price indices. Thus, gains
26 by one party relating to index price changes do not necessarily produce losses to
27 the counterparty.

28
29 **Finding 4) Published index gas prices hardly affect NYMEX closing prices, if at all.**

1 22. In reality, this works the other way around: NYMEX gas futures prices⁷ influence
2 physical price indices issued by the publishers. By 2000, the NYMEX's natural
3 gas futures contract has become one of the most widely traded energy
4 commodities in the world. In 1999, More than \$720 billion worth of natural gas
5 changed ownership on the NYMEX, in 2000 the trade rose to over \$760 billion.
6 Commodity trading of this depth provides a useful, live benchmark for traders of
7 gas at the various regional points, e.g., SoCal, etc. During bid-week, gas buyers
8 and sellers pay attention to NYMEX prices for the prompt (i.e., the following)
9 month, and they consider that information in determining what their physical
10 market prices will be for that next month. Accordingly, the data from which the
11 publishers' price indices are derived incorporate information about NYMEX gas
12 futures prices as they exist during bid-week for the following month, just the way
13 they incorporate other important market information – weather expectations,
14 pipeline matters, storage fills, and more.

15 23. Bid-week prices at points throughout North America other than Henry Hub also
16 take into consideration information about regional price differentials, i.e.,
17 differences in price between the location in question and Henry Hub, so that
18 NYMEX price information can be interpreted in a meaningful way.

19 24. Finally, it should be pointed out that NYMEX trading of the prompt month
20 futures contract ceases in the middle of bid-week in order to give NYMEX
21 sufficient time to match parties who stand for physical delivery of gas at Henry
22 Hub with those who hold contracts for receipt of gas at Henry Hub. For this
23 reason, gas price indices are issued by the publishers after the contemporaneous
24 NYMEX contract has stopped trading. Trading of the next month's gas futures
25 contract (which would take effect a full month after the end of any bid-week)
26 continues, but is influenced largely by forward expectations for that next month.
27 Consequently, release by the publishers of their monthly index prices has little, if
28 any, effect on subsequent futures prices. I have studied this relationship in

⁷ The gas futures contract on NYMEX is a physical, firm contract for 10,000 MMBtu of gas to be delivered (received, in the case of purchases) at Henry Hub, in Erath, Louisiana, in even amounts every day during a month. The contract is a standard form, binding agreement for the sale and purchase of a fixed amount of gas whose only "blank" spaces are the price and the month in which the gas is to be delivered or received.

1 previous litigation and there does not appear to be any correlation between the
2 two, i.e., physical price indices do not affect subsequent month gas futures prices.

3 25. In conclusion, NYMEX prices are an important influence on regional price
4 indices, not the other way around.

5

6 **Finding 5) Widespread basis trading had become characteristic of the U.S. gas**
7 **market by 2000.**

8

9 26. In my experience, gas traders in 2000-2002 were commonly trading price
10 differentials at least as much as they were trading prices. In other words, it would
11 not be unusual for traders to quote to customers a price that reflected the variance
12 from NYMEX prices or Henry Hub prices, rather than the price itself. Thus, a
13 customer for delivery of gas at SoCal in May 2000 might have reasonably been
14 quoted a fixed basis figure of -\$0.10 per MMBtu, rather than a fixed price of, say,
15 \$3.00 per MMBtu for May 2000. The customer would then pay the prevailing
16 NYMEX price for May less \$0.10 per MMBtu. This was an important commercial
17 mechanism because the Henry Hub portion could readily and comfortably be
18 hedged on NYMEX because of that market's exceptional liquidity, thus value as a
19 hedging tool. The negative \$0.10 per MMBtu portion of the transaction could not
20 be hedged on NYMEX at the time, but could be hedged in the over-the-counter
21 markets. As such transactions were over-the counter at the time, i.e., not on the
22 regulated NYMEX exchange, the degree of price transparency and liquidity in
23 such transactions was necessarily less than on NYMEX.

24 27. In my opinion, basis trading arose and became commonplace by 2000 because the
25 bulk of price risk exposure in transactions could be hedged on NYMEX, thus it
26 made sense to separate out the Henry Hub component from the regional
27 differential component.

28

29 I reserve the right to modify or update my opinions as additional data or new information
30 becomes available to me.

31